UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

GEOGRAPHY **0460/22**

Paper 2 **May/June 2010**

1 hour 30 minutes

Candidates answer on the Question Paper.

Additional Materials: Ruler
Protractor
Plain paper

1:50 000 Survey Map Extract is enclosed with this question paper.

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name on all the work you hand in.
Write in dark blue or black pen.
You may use a soft pencil for any diagrams, graphs or rough working.
Do not use staples, paper clips, highlighters, glue or correction fluid.
DO **NOT** WRITE ON ANY BARCODES.

Answer **all** questions.
The Insert contains Photographs A, B and C for Question 2.
Sketch maps and diagrams should be drawn whenever they serve to illustrate an answer.

The Survey Map Extract and the Insert are **not** required by the Examiner.

At the end of the examination, fasten all your work securely together.
The number of marks is given in brackets [ ] at the end of each question or part question.

For Examiner's Use	
Q1	
Q2	
Q3	
Q4	
Q5	
Q6	
Total	

This document consists of **15** printed pages, **1** blank page and **1** Insert.

1 The map extract is for Hwange West, Zimbabwe. The scale is 1:50 000.

For Examiner's Use

(a) Fig. 1 shows the positions of some features in the south of the map extract.

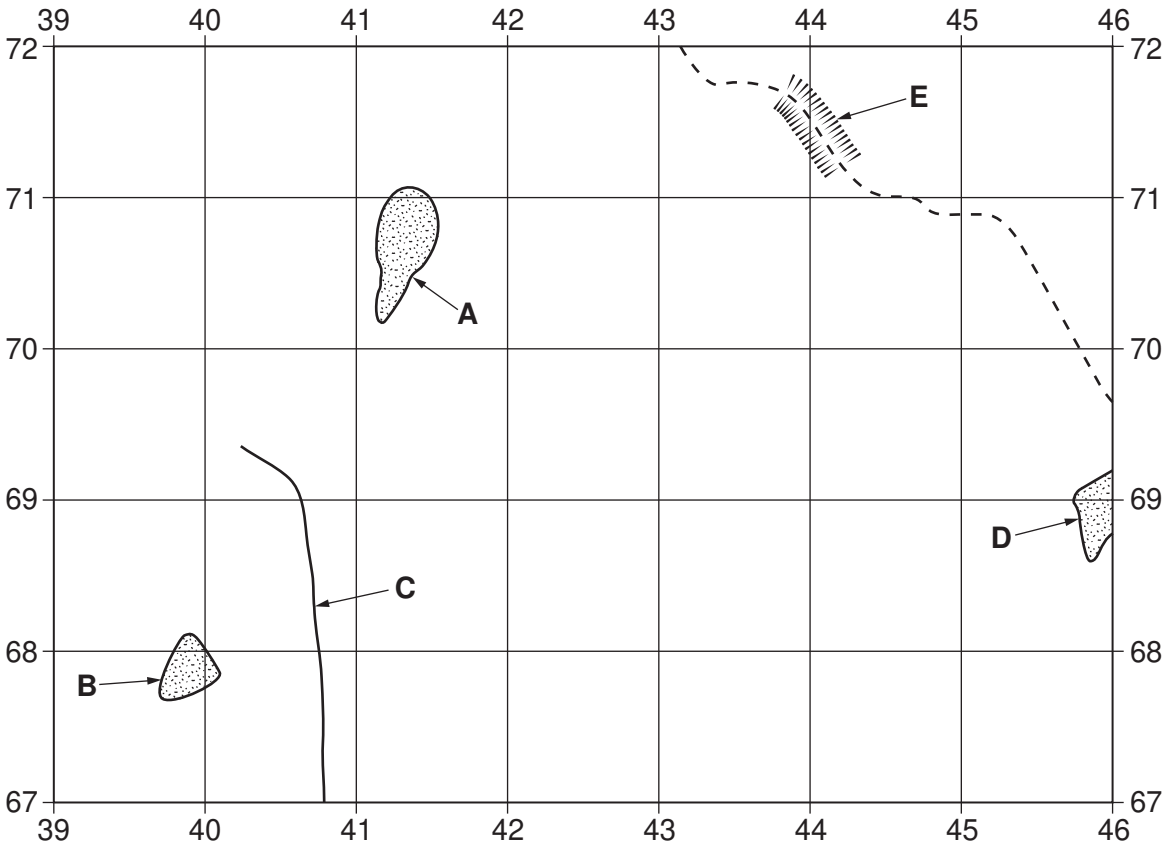

Fig. 1

Study the map and identify the following features shown on Fig. 1:

(i) the land use at A (4170);

.....[1]

(ii) the type of buildings at B (3967);

.....[1]

(iii) the type of road at C (4067, 4068, 4069);

.....[1]

(iv) the land use at D (4568, 4569);

.....[1]

(v) the feature to keep the railway level at E.

.....[1]

(b) Look at the River Deka, the main river which crosses the map.

(i) Circle the word which describes the gradient of the river.

flat gentle steep very steep [1]

(ii) State the compass direction in which the river is flowing.

.....[1]

(iii) Describe other features of the river.

.....

.....

.....

.....[3]

(c) State the six figure grid reference of the railway crossing of the River Deka.

.....[1]

(d) Look at Mavinga Hill in grid square 4173.

(i) What is the height at the top of Mavinga Hill?

..... metres [1]

(ii) What is on the top of the hill?

.....[1]

(iii) Describe the relief which would be crossed on a walk from the top of Mavinga Hill due west to the gravel or earth road which crosses grid square 4173.

.....

.....

.....

.....

.....

.....[3]

(iv) State the bearing, from grid north, from the top of Mavinga Hill to the top of Sikabala Hill (467753).

..... degrees [1]

[Turn over

(e) Look at the road between the junction at 404700 in Kamandama and the railway crossing at 459696 in Hwange. Measure the distance along the road. Give your answer in metres.

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..... metres [1]

(f) Fig. 2 shows three grid squares.

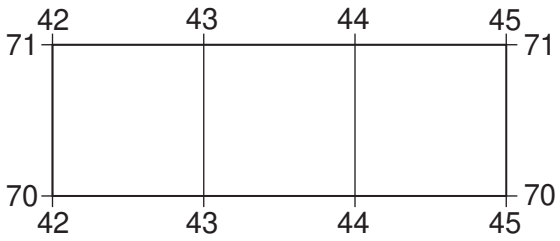

Fig. 2

(i) Shade the grid square with the highest density of drainage. [1]

(ii) Using the correct symbol, draw on Fig. 2 the position of the largest mine dump in the area. [1]

[Total: 20 marks]

For Examiner's Use

2 **(a)** Study Photographs A and B (Insert), which show two different types of housing in a city. Identify **four** differences between the types of building shown.

Difference 1 .....

.....

.....

Difference 2 .....

.....

.....

Difference 3 .....

.....

.....

Difference 4 .....

.....

.....[4]

(b) What advantages would people gain from moving from the area in Photograph B to live in the area shown in Photograph C (Insert)?

.....

.....

.....

.....

.....

.....

.....

.....[4]

[Total: 8 marks]

3 **(a)** Study Fig. 3, which shows the climate at a place in the southern hemisphere and Table 1, which shows the data plotted on Fig. 3.

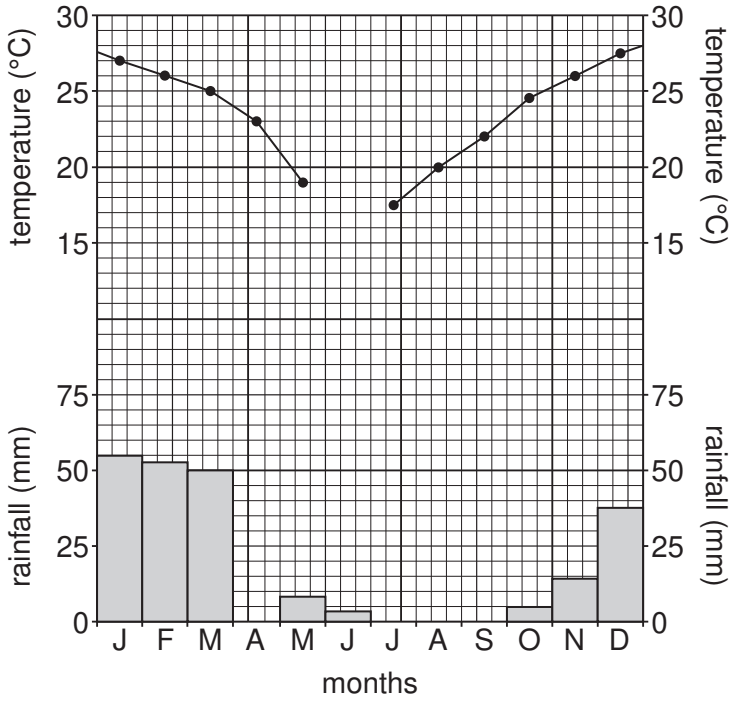

Fig. 3

Table 1

month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	total
temperature (°C)	27	26	25	23	19	17	17.5	20	22	24.6	26	27.4	
rainfall (mm)	55	53	50	25	8	3	0	0	0	5	14	37	250

(i) Using information in Table 1 complete the graph by adding:

- the temperature for June, [1]
- the rainfall for April. [1]

(ii) Use Table 1 to complete the description of the climate by circling the correct missing information.

The annual temperature range is ..... °C.

10 10.4 20 22.2

It has a total annual rainfall of 250 mm, which is a ..... amount.

low moderate high very high

The rain falls ..... .

all year in the coolest season in the hottest season. [3]

(b) Study Fig. 4, which shows the annual rainfall for the years from 2000 to 2008 at the same place as in Fig. 3 and Table 1.

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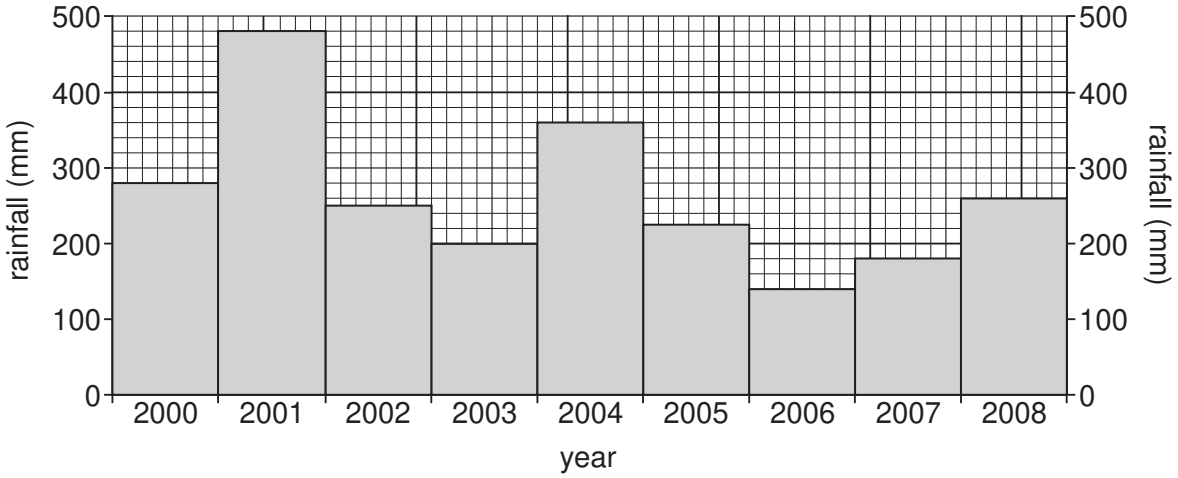

Fig. 4

(i) Draw a horizontal line across Fig. 4 at 250 mm and label it 'mean annual rainfall'. [1]

(ii) Between which year and the next year did the total rainfall change the most? Circle the correct answer.

2000 and 2001 2001 and 2002 2003 and 2004 2004 and 2005 [1]

(iii) Explain why the information in Fig. 4 suggests that the mean annual rainfall is not a very useful indicator of the expected rainfall of this place.

.....

.....[1]

[Total: 8 marks]

4 Study Table 2 and Fig. 5, which give information about some types of weathering and some of the world's climates.

For Examiner's Use

Table 2

Type of weathering	Name of process	Climatic requirements	Process
.....	freeze-thaw	frequent temperature fluctuations above and below 0 °C	water in cracks expands when it freezes, widening and deepening the cracks
mechanical	exfoliation	very hot days and very cold nights	the heated rock surface expands, causing cracks parallel to the surface
chemical	oxidation	heat and moisture	oxygen combines with ferric iron to form ferrous oxides (rust) which decompose, so the rock crumbles
.....	carbonation	heat and moisture	water combines with carbon to form carbonic acid which changes calcium into a soluble form
biological		heat and moisture	dead plants and animals decompose, producing acids which cause some minerals in rocks to decompose roots and animals penetrate into cracks in the rocks, enlarging them

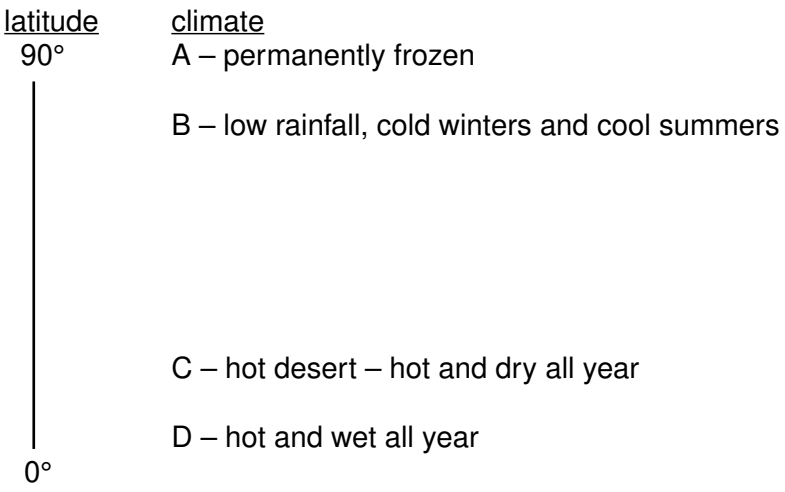

Fig. 5

(a) **(i)** Complete Table 2 by writing *chemical* and *mechanical* in the appropriate spaces. [1]

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(ii) Using the information in Table 2, complete Table 3 by writing *freeze-thaw*, *exfoliation* and *oxidation* in the correct spaces.

Table 3

name of weathering process	result of the weathering
.....	thin, curved sheets of rock break off
.....	angular blocks break off
.....	rock crumbles into separate minerals

[3]

(b) Using information from Table 2 and Fig. 5, give the letter from Fig. 5 of the climate in which

- the rates of biological and chemical weathering are greatest,

  letter ..... [1]

- freeze-thaw is most important,

  letter ..... [1]

- exfoliation is most important,

  letter ..... [1]

- no weathering takes place.

  letter ..... [1]

[Total: 8 marks]

5 **(a)** Table 4 shows the approximate number of tourists who visited Tunisia in 1995 and 2005.
Tunisia's rank (position) amongst African countries for tourist arrivals in those years is also given.

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Table 4

year	1995	2005
African rank	2nd	3rd
tourist numbers	4 100 000	6 450 000

Fig. 6 shows the same information for the other top-ranked African countries.

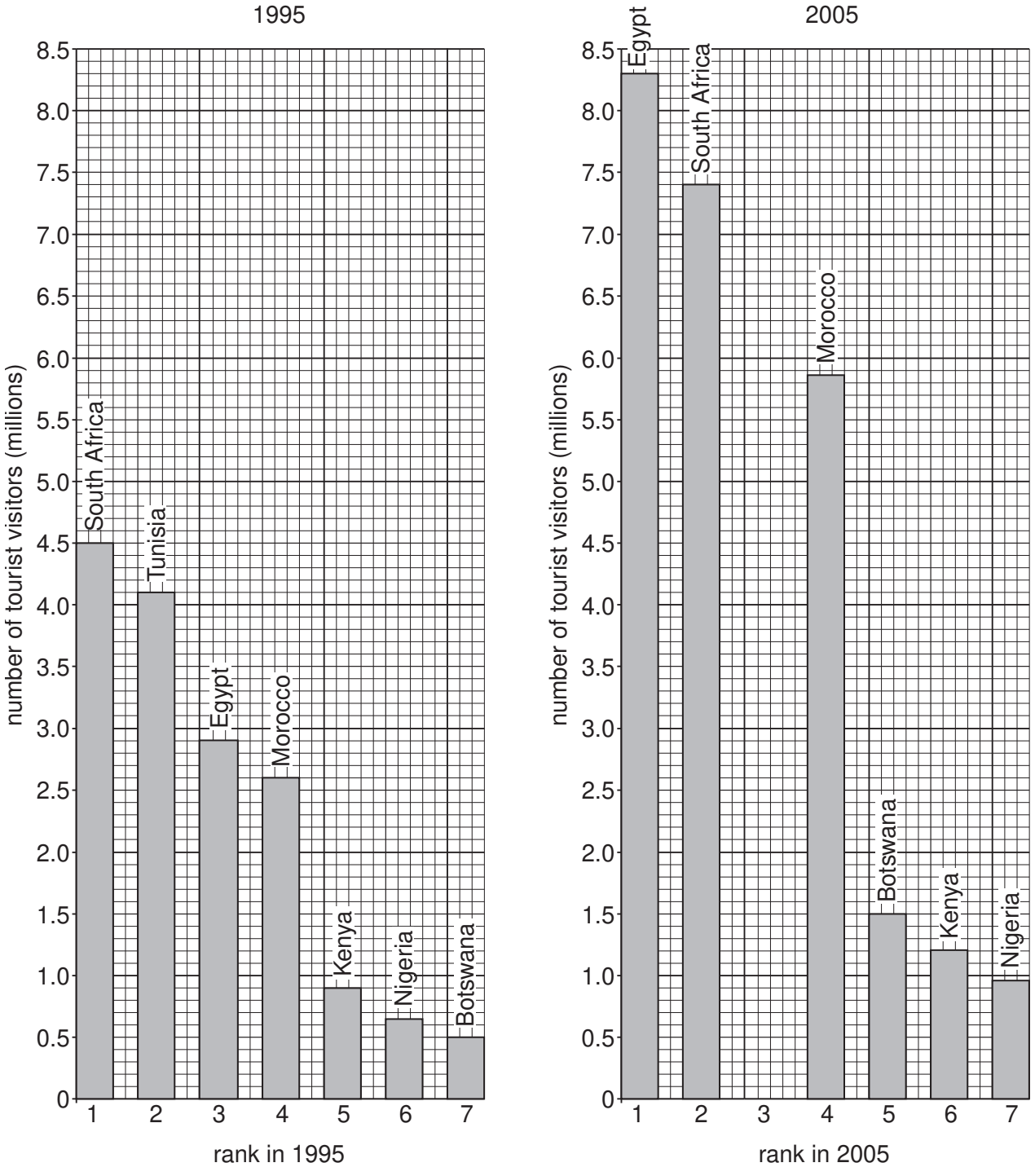

Fig. 6

(i) Use the information in Table 4 to complete Fig. 6 for Tunisia in 2005. [1]

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(ii) Which country had the largest number of tourist visitors in 1995?

..... [1]

(iii) Name the country which had the largest growth in tourist numbers between 1995 and 2005 and state the approximate increase in its visitor numbers over the ten year period.

Country ……..... Increase .....[2]

(b) Study Fig. 7, which shows the location of the countries shown on Fig. 6.

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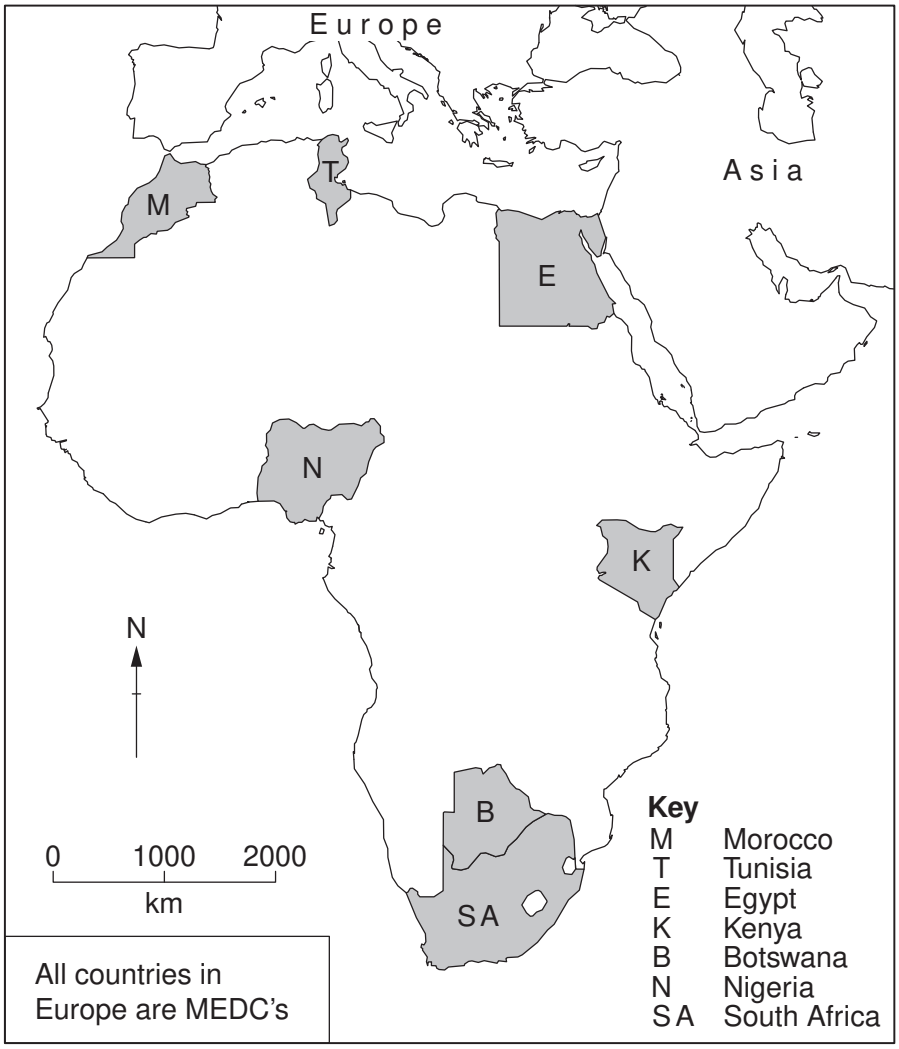

Fig. 7

(i) How can their location help to explain why Morocco, Tunisia and Egypt receive many more tourists than Botswana and Nigeria?

.....

.....

.....[2]

(ii) Suggest **one** physical and **one** economic reason why countries which are near neighbours may have large differences in tourist visitor numbers.

physical reason .....

.....

economic reason .....

.....[2]

[Total: 8 marks]

6 **(a)** Fig. 8 shows two of the reasons why coral reefs are at risk.

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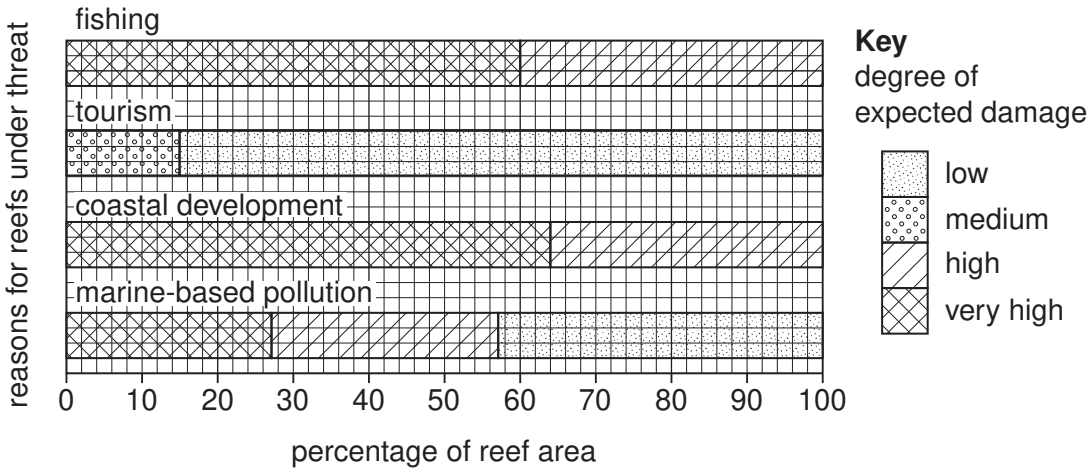

Fig. 8

(i) What is the greatest threat to the life of the coral reefs?

.....[1]

(ii) What percentage of the reef area is at high risk from marine-based pollution?

.....% [1]

(b) Look at Fig. 9, which gives information about an island and Fig. 10, which shows developments on the island.

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- tourism is the main economic activity
- the growth of tourism has led to a rise in construction industries
- there are only 25 sq km of reefs and all are threatened by human activities

Fig. 9

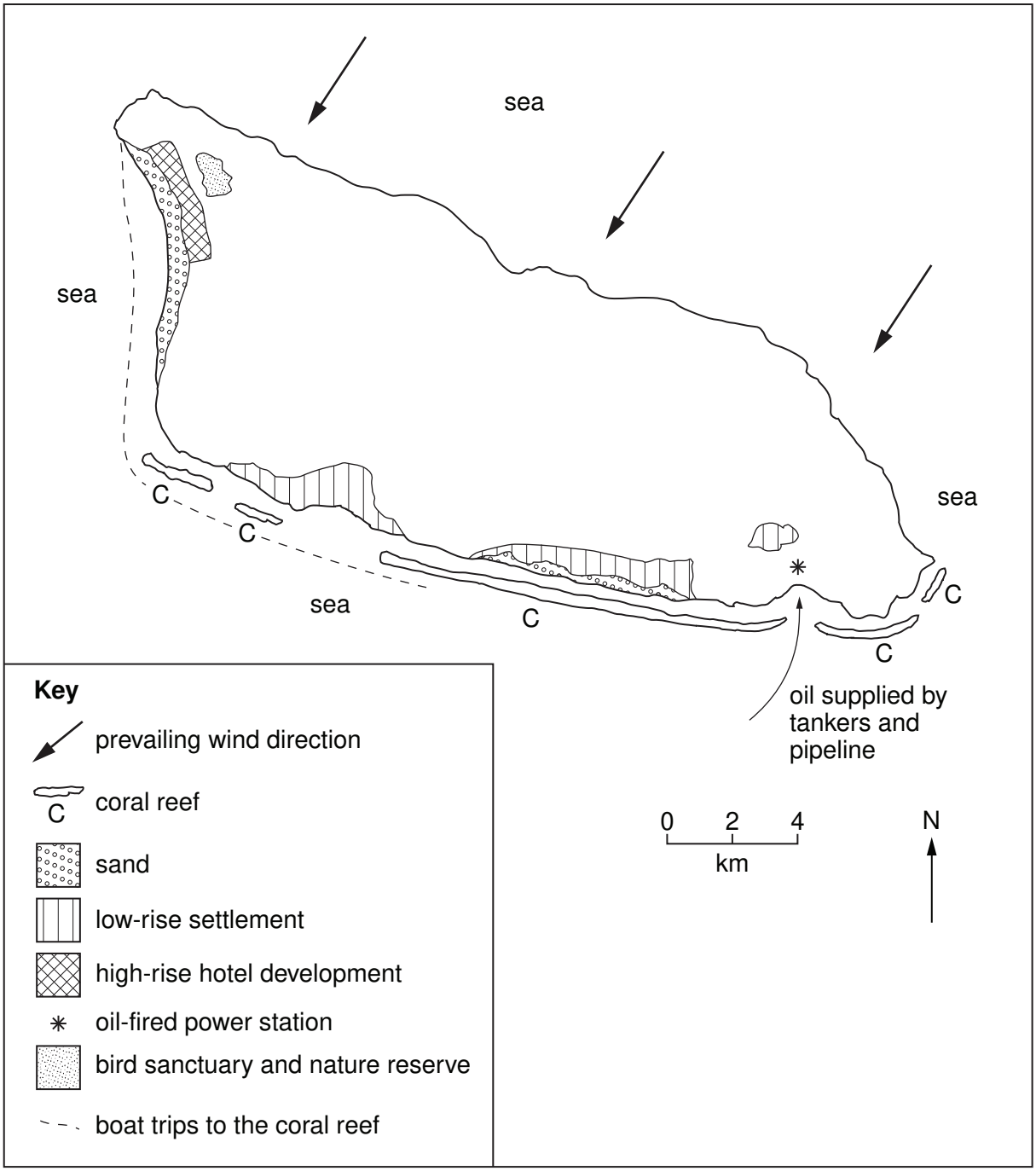

Fig. 10

Using only evidence from Fig. 10:

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(i) state **one** way in which marine-based pollution (pollution which occurs at sea) is likely to occur in this area;

.....

.....[1]

(ii) explain why the oil-fired power station will not cause air pollution problems on the island;

.....

.....

.....[2]

(iii) explain how the location of the recent high-rise hotel development will cause noise and visual pollution problems.

.....

.....

.....

.....

.....

.....[3]

[Total: 8 marks]

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